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On the reconstruction of the surface structure of the spotted stars

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Abstract

We have developed and tested a light-curve inversion technique for photometric mapping of spotted stars. The surface of a spotted star is partitioned into small area elements, over which a search is carried out for the intensity distribution providing the best agreement between the observed and model light curves within a specified uncertainty. We have tested mapping techniques based on the use of both a single light curve and several light curves obtained in different photometric bands. Surface reconstruction artifacts due to the ill-posed nature of the problem have been identified. © 2013 Pleiades Publishing, Ltd.

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